CURIOUS COURTSHIP CUSTOMS OF THE ANIMAL KINGDOM

Interesting Mating Habits of the Lower Creatures—Fantastic Exhibitions to Attract Mates—Love Making Among Hoofed Beasts

SINCE Darwin published his "Descent of Man" much has been discovered about the animal kingdom, not the least interesting being the various courtship customs of several species. An English naturalist, W. P. Pycraft, who is a well known authority, has just published a book on this subject through Henry Holt & Company entitled "The Courtship of Animals."

We are none of us, he says, given to boasting of our poor relations, and most of us indignantly repudiate our kinship with the apes. But facts are stubborn things: the relationship is there, whether we admit it or not; and those who love truth for truth's sake will not shirk the comparison between themselves and their remote cousins. Unhappily, from our present point of view, this cannot be carried very far, for the "love idylls" of the apes have yet to be written. Such facts, however, as have been gleaned are interesting. Of the higher, manlike, or "anthropoid" species only the most meagre information is to be obtained, but this nevertheless is interesting. For the most part we have to be satisfied with inferences drawn from a study of the external differences between the sexes—from the "secondary sexual characters," in short, and from the records of travellers who have encountered these creatures in their native wilds.

The species which throw most light on this theme are the gorilla, the chimpanzee and the orang-utan. Of these the chimpanzee has most in common with the human race. But it may satisfy the qualms of many to know that between the ape and the man there is a great gulf fixed. The brain of the largest ape is less than half the size of that even of the lowest of mankind. Man is a reasoning and for the most part a reasonable creature, he is a tool making animal. This is more than can be said of any of the apes, even the most intelligent. Their teeth and immensely powerful arms must serve their every need. No ape ever fashioned for himself either a knife, a vessel to carry water or any means of transport, and herein we have a measure of his brain capacity. The huge jaws and great canine teeth are no less conspicuous "marks of the beast."

These, however, man himself has but recently lost, as was proved by the sensational discovery of the skull of an apelike man at Piltdown, in Sussex, during 1912. Herein the jaw was essentially that of an ape, while the base of the skull was as markedly human. The cheek teeth, or molars, were of the human type; but the canine were apelike, though much inferior in point of size. That the men of this remote age—which was possibly that of Pleiocene times and certainly not later than early Pleistocene—had begun to use rudely fashioned tools is proved by the roughly chipped flints found with the remains. With the invention of tools the decline in the size of his "eye" teeth began.

Of the normal everyday life of the great apes but little is known. It would seem, however, that they live in family parties—an adult male accompanied by a female and one or more young of different ages, of which one is commonly an infant in arms. It is difficult to procure positive evidence on this point, but it is commonly believed that the young remain with their parents till they are several years old, when they are gradually driven off to fend for themselves. This is a common procedure with all animals. The dominant impulse in this is something akin to greediness, an indefinable perception that too large a family party will entail too great a strain on the food supply, hence the now no longer helpless young are regarded as a danger to the safety of the family and are turned adrift. Incidentally this procedure is of immense benefit to the race, for it insures its distribution, enlarges its chances of survival and lessens the danger of inbreeding.

Among the apes we meet, as with the human species, with both monogamy and polygamy. But it would be dangerous to assume that the reasons for polygamy are the same in both. Polygamy indeed has by no means always the same significance. In the most primitive, half human races of the past, as with the manlike apes to-day, polygamy is determined by accident rather than choice. These extinct peoples, like the great anthropoids, were normally monogamous, but on the death of a male in conflict with his neighbor or from other causes his mate would probably of her own free will seek out the nearest male and even if he were already mated would be at once adopted into the family circle. This certainly happens in the case of the gorilla and chimpanzee to-day. But among living races of mankind, both savage and civilized, multiplicity of wives is a matter of choice on the part of the male, and in many cases to achieve this females from other tribes have to be secured—either by purchase or conquest. With the lower apes, or "monkeys," polygamy only obtains among gregarious species, and either because the birth rate of the females exceeds that of the males or because a considerable number of young males are killed annually by exciting the jealousy of the older males, who are excedingly pugnacious.

From apes to antelopes is a far cry, but contrasts are always helpful. Antelopes and deer, zebras and elephants, rhinoceroses and swine are types taken at random of that great and important group of animals known as the ungulates," or "hoofed" animals. These illustrate in a very striking manner what is meant by the term "secondary sexual characters." They demonstrate no less forcibly what is meant by the term "sexual selection." They are valuable in this connection because of the often formidable weapons in the shape of horns and tusks which so many species have developed during the struggle for mates.

But "sexual selection" will not explain their origin and it is difficult in the present state of our knowledge to discover any clues which will reveal this. In seeking these there are certain broad aspects of the problem which are not to be lost sight of. In the first place horns at any rate are confined to the hoofed animals. That the various types of hoofed animals, living and extinct, have had a common ancestry no one at the present day will probably call in question. The relationship, however, of the various living types one to another is by no means always apparent; the missing links are to be sought in the records of the rocks.

A male deer having once succeeded in forming a harem will commonly contrive to repeat his success year after year, withstanding all comers. But sooner or later his vigor wanes and he is ousted by another and younger male. Not else would the stamina of the race be preserved.

That our knowledge of that most important period of life of the larger mammals is lamentably incomplete will be realized by any one who seeks enlightenment on this subject. Most of the meagre information we possess has been collected by travellers and sportsmen, neither of whom have the time to devote to the long and laborious watches that a fuller history demands. Every now and then a glimpse is afforded of this period of the life history which brings home in a very convincing fashion how little is really known. It seems certain that the fighting is to be regarded as but a phase of a cycle of events which takes place at this time. Thus, for example, the old naturalist and traveller Schweinfurth tells how he once encountered a herd of hartebeest which were apparently effervescing with animal spirits, for they kept running around in couples like horses in a circus, using a clump of trees as a pivot. Others in groups of three or four stood by interested spectators. After a time these in turn took their places and ran round, two at a time, in their own circuit and in the same fashion. Their evolutions, he says, were so regular as to suggest the guidance of some invisible ringmaster. These gyrations may be regarded as an erotic dance. The sambar under like excitement will stalk about with erected tail, outstretched muzzle and everted face glands, and the black buck among the antelopes behaves in like fashion.

It cannot be supposed that these quaint performances are peculiar to the species in which they have been observed, but rather it may be inferred that similar antics besides others yet to be discovered are performed by all.

Our survey of the "hoofed" animals has so far been confined to the ruminants. Space must now be found for a brief review of what obtains under like circumstances in the case of the great pachyderms—the elephant, rhinoceros and hippopotamus, the pig and the camel.

As to actual "courtship" among these animals practically nothing is known, but the varied and formidable weapons which they possess are enough to show that the secondary sexual characters play a very important part in the preliminary capture of mates. That they may also be used for the more prosaic purpose of securing food is nothing to the point. In the elephant, for example, the tusks are sometimes of enormous size and weight; specimens of eleven feet in length and weighing as much as 250 pounds are on record. They are used for cutting through the bark of machabel trees, which is then seized by the trunk and torn off, for elephants are extremely fond of this bark; and they are also turned to account in breaking up roots which have been exposed by digging with the forefeet. But this is certainly not the main purpose of such weapons. On the contrary, their use is primarily as weapons of offence between rival bulls. As one would expect, they never attain to a very large size in the female, but that they are large enough to serve her at need is shown by the fact that a portion of a tusk evidently of a cow elephant was once found imbedded in the jaw of a bull. There can be little doubt but that this was broken off in an endeavor to repel the advances of a too amorous male, for, as with all animals, pairing is impossible without the consent of the female, and this is never accorded until she is desirous that it should take place. As a preliminary to this an amorous dalliance is perhaps the invariable rule among animals, and this takes many and often strange forms. The elephant affords a case in point, for the late A. H. Neumann once came upon a pair which were evidently, as he says, "love making." Creeping upon them noiselessly, he found the male fondling his mate with his trunk, and then standing side by side they crossed their trunks and put the tips thereof into each other's mouths, the elephantine form of kissing. Deer, cattle and horses, cats and dogs constantly lick one another under like circumstances.

The old bulls among seals are the first to seek the rookeries, or breeding grounds, taking up their territory a full month before the cows arrive. Later, the younger bulls appear, and the more daring endeavor to force their way through the ranks of those who have already taken up positions. This often leads to fighting, but more usually nothing further than "bluffing" is indulged in, though it is commonly supposed that very severe engagements take place. This seems, however, to be only occasionally true. In due course, generally about the second week in June, the cows begin to arrive, at first in straggling numbers, but soon the main body puts in an appearance, and before the end of the month many thousands of both sexes are crowded along the foreshore. But yet, contrary to the generally accepted belief, no serious fighting takes place. The bulls quietly seize the females as they arrive. It would seem that the first arrival serves as a focus of attraction for all later comers landing in the vicinity. The bull holding the most advantageous post—that is to say, that nearest the best landing place—starts the collection and, unintentionally, the distribution of the cows. Having seized the first arrival, he places her by his side. As the later females arrive he gives each a most cordial welcome, and then proceeds to round up his harem. But soon he has more wives than he can continue to control. Do what he will, he cannot be in two places at once; and thus it is that in rushing off to chastise some covetous neighbor one or more bulls on the opposite side of his harem proceed to make captures from his horde. And this system of abduction goes on over the whole rookery till all the cows have been appropriated, leaving a crowd of envious bachelors in the background who have not yet developed either courage or strength to secure mates for themselves.

In the management of the harem the bull is an adept. Whether he has five cows or fifty, he is, says Dr. Lucas, "master of the situation." His will is law. Not that it is always tamely accepted as such, but the result is the same. If a cow becomes restless and moves about a warning growl usually quiets her. If the movement is persisted in and an attempt to escape evident the bull is up at once with a show of fierceness and in chase. He may simply strike her down with his open mouth. Often in doing so his sharp canines tear a gash in her skin. He may even seize her in his mouth and deliberately throw her or carry her back into the harem. If the cow thinks she has a chance to get away she may try to outrun him. If she miscalculates the distance he seizes her, after a few swift bounds, by the skin of the back or by the hind flipper and tosses her, often torn and bleeding, into the family circle. As a rule, however, she avoids this seizure by turning and facing her lord and master and biting him in the breast and throat. But all to no purpose. In spite of her violent protests he pushes her backward before him into the fold.

When the peacock's trailing glory is erected the bird throws the body forward and downward, so that the outermost train feathers fall downward on either side in front of the wings, which are more or less trailed; so that from the front the head and neck only are visible, the rest of the body being hidden behind the screen. The manner of this display is extremely interesting, for the bird seems to be conscious of the effect produced, though it cannot be supposed that this is really the case.

When displaying the bird gradually approaches the nearest female and slowly erects those extraordinary plumes. So soon as this is accomplished he begins to walk backward toward the object of his attentions, presenting nothing but a great round shield of dull brown feathers backed up by the tail feathers and the dull colored wings. So soon as the judges himself near enough, however, he suddenly swirls round, confronting her in all his splendor and heightening the effect with a loud scream accompanied by a rapid vibratory motion of the train feathers, which produces sounds like the pattering of rain on leaves. Then he stands before her with bowed head, as if to give her an opportunity of drinking in his splendor to the full. Commonly, however, she appears to be utterly indifferent and either walks away or continues a real or affected hunt for food, as if no such thing as a lovesick suitor were within a hundred miles of her!

Among the reptiles, as among the birds and beasts, the desire to obtain territory seems to be strong. But the information to be gathered as to their behavior in the search for mates and after is exceedingly small.

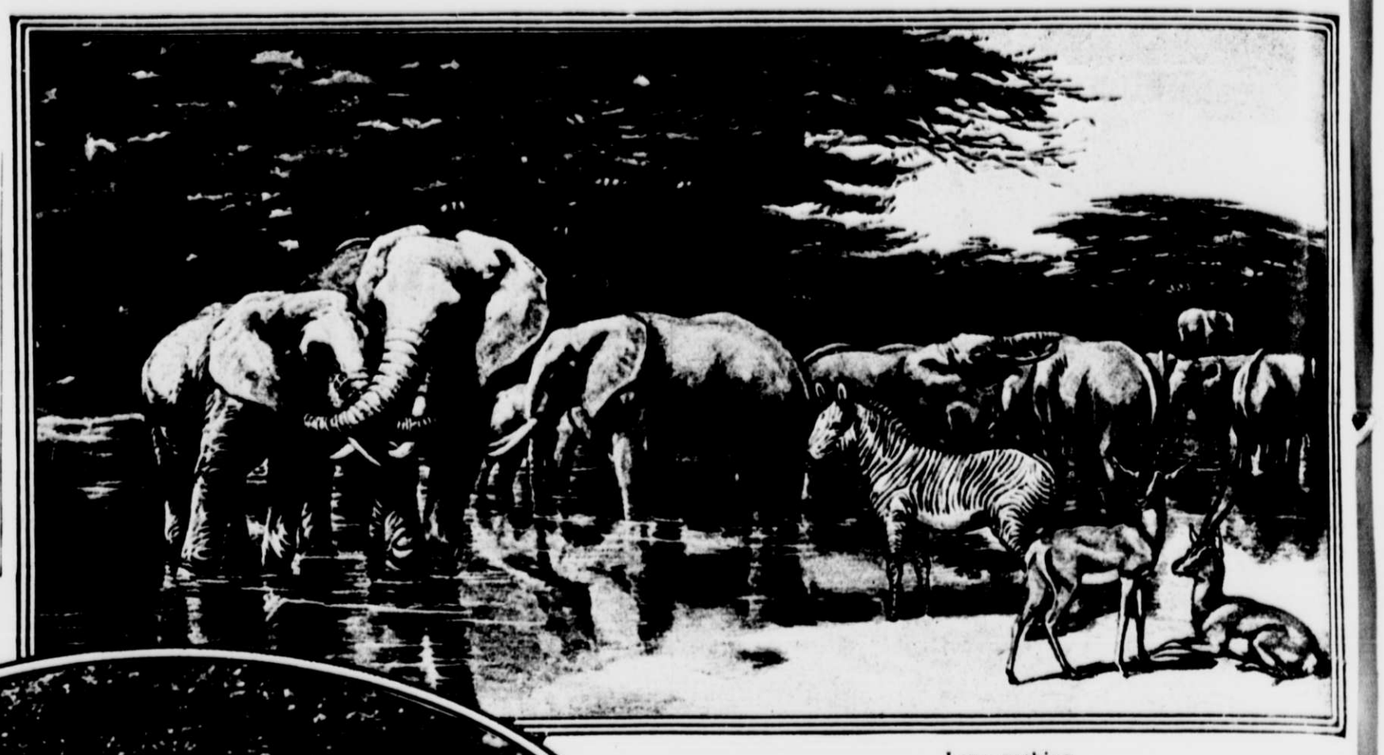
Sluggish by nature, all become animated under the stimulus of mate hunger, and this is especially true of the males. As one would have expected from what has just been said, desire is most demonstrative in brightly colored and highly ornamented species. But even the dullest hued and most phlegmatic display quite surprising agility and animation under the fever of love. Thus among the crocodiles fierce battles are fought by rival males for the possession of some coveted female; and later the victor strives to dispel the apathy of his mate by caperings most undignified in a crocodile. He will twist and turn, or rather twirl, round on the surface of his chosen pool with head and tail raised high in air and his capacious barrel of a body swollen out to bursting point. These antics are performed to the accompaniment of loud bellowings and roars heard at no other season of the year. But more than this, an appeal is made to the nose as well as to the eyes of his apathetic mate, for during all this parade of love he exudes from glands in the lower jaw and tail an almost overpowering smell of musk.

The facts which have come to light in regard to the "courtship" of butterflies since Darwin wrote are meagre enough, but such as have been recorded give no support to the supposition that the females are really influenced by or even perceive the colors of their mates. Just five and twenty years ago the naturalist Skertchley published some observations on the courtship of that magnificent Bornean butterfly Ornithoptera brookiana. He one day came on a male sipping honey from the flowers of a tree, vibrating its wings with the rapidity of a hawkmoth, and the vivid green of the wings flashing in the sunlight, though the crimson areas thereof were invisible. The female came "and did all the wooing." They circled about in flight with the female above and somewhat behind, so that she could see, we are told, the emerald markings, but there was no real evidence here that she was really influenced by his coloration, and if this really were the case then the coloration of the female equally demands an explanation, for this, though less gorgeous than that of the male, is far from a primitive type; on the contrary, it is of a highly differentiated character. Furthermore, in this genus, as has already been remarked, the males outnumber the females by roughly 100 to 1. Again, Moseley, the naturalist on the memorable voyage of the Challenger in 1872, when in the Aru Islands, was once "lucky enough to find a flock of about a dozen males fluttering around and mobbing a single female. They were then hovering slowly, quite close to the ground, and were easily caught." But he was by no means convinced that any choice was exerted.

Farbe's observation on the mating habits of scorpions are exceedingly interesting and they have brought to light some very extraordinary phenomena. His notes were made on the species common in the south of France—Buthus occitans. Cecil Warburton, referring to the distinguished Frenchman's work, quotes the following noteworthy passage in the "Cambridge Natural History": "After some very curious antics, in which the animals stood face to face with raised tails, which they intertwined * * * they always indulged in what Farbe calls a 'promenade a deux,' hand in hand, so to speak, the male seizing the chelæ of the female with his own and walking backward while the female followed, usually without any reluctance. This promenade occupied an hour or more, during which the animals turned several times. At length, if in the neighborhood of a suitable stone, the male would dig a hole, without for a moment entirely quitting his hold of the female, and presently both would disappear into the newly formed retreat."

After the mating, as with the spiders, the male is often devoured by the female. After any combat with an enemy, such as a Lycosa or a Scolopendra, it seems to be de rigueur to eat the vanquished.

If the mating period in the case of the higher animals rouses the males to the pitch of frenzy, that frenzy is dangerous only to possible rivals. With the more lowly spiders and scorpions ferocity of disposition is a normal feature and one which can with difficulty be held in check long enough to permit the all important act of mating to take place. In how far this is accounted for by the extremely deficient senses of sight and hearing, which are such marked features in these animals, it would be difficult to estimate. But that the manner of their display is governed by these deficiencies there can be no doubt. The spider, having a more or less efficient vision at short range, executes more or less elaborate antics in front of the female, designed, as in the case of the birds, to fan desire, already smouldering, to a flame. With the purblind scorpion the spider antics are useless; he must proclaim his desire by a pressure of the hand and by intertwining his tail with that of his prospective mate as they "walk out" together. But scorpions at one time were credited with a very acute sense of hearing; later investigations, however, fail to yield any evidence whatever that they possess this sense, though experiment has proved that their sense of touch is excessively delicate.



Love making.

Scorpions—Early stages in the courtship of scorpions are full of romance. Two prospective partners for life engaging in kind of waltz, holding each other's "hands."

Herein two birds are seen facing each other with the great head crest fully erected. While in this mood these birds will strut up and down with mincing gait and drooping wings.

All manlike apes possess canine teeth and powerful voices. In orang-utan compass of voice is heightened by means of a huge windbag which encircles the neck. The windbag is seen in picture on left, which also shows great folds of skin developed by adult males. In other species "ornaments" in the shape of beards and mustaches are developed, while in the mandrill, at extreme right, the face is vividly colored.

Can't Read Character by Finger Prints

FACES wrinkle, heads get bald, mouths sink in and feet acquire bunions, but finger prints abide unchangeable. At the bureau of identification in Police Headquarters they will tell you that while men change the minute corrugations in the skin at the digit tips continue the same forever.

And every human being in the matter of finger prints is different from every other. Twins are not twins with respect to these unvarying identification marks. The little towheaded girls who have to be blue and red ribboned to tell them apart are as unlike in the finger prints as if they belonged to entirely different fathers and mothers. Family resemblance is a joke when you come to put the finger tip prints under the magnifying glass. The digit marks make no account of blue blood, aristocracy, democracy or physiognomy. They're just crevices in the skin.

Are the marks then entirely without significance in the reading of a man's character? Do they reveal nothing with respect to his passions, his morals, his predilections? Absolutely nothing, says Lieut. John H. Allen of the identification bureau. He has made several thousand of these prints and has the records of the owners of all of the fingers right where he can put his hand on them within a few seconds.

"It is all bosh to contend that a criminal has a certain class of finger prints in contrast to the law abiding person," says Lieut. Allen when you put this angle of the identification system up to him and he warms up to the discussion. "There's nothing in any finger print that spells murder or burglary or arson or embezzlement.

"You can't make that point. The prints won't analyze up to it. Malefactors' marks are just as nice bosh as the marks of a clergyman's fingers. You can't gaze at the finger prints we make and say severely: 'Well, he looks it.' It's not provable. I'll allow that the great tone artist who sees a green or a blue or a red color attaching to certain chords may discern something of a man's morals in his finger marks, but I'm blamed if I can.

"I may be considered prejudiced, however," says Lieut. Allen, with a twinkle of the eye blending humor and sarcasm, "because I have very strong opinions as to whether or not physiognomy is a reliable guide in determining the moral or unmoral man. Some of the photographs of crooks we have here show as fine looking fellows as you'd meet in a day's walk. Honesty beams from their eyes—if honesty ever does stick out that way—and if you had to put your confidence to a person according as his photograph impressed you why you'd hand over your farm deeds and safe deposit keys to some of the most notorious swindlers listed on police records. And on the other hand you constantly come in contact with men who are the most prominent and reputable in the city with faces that almost force you to believe they would cut a throat and scuttle a ship.

"Which leads to the conclusion that many men serving terms in prison have no doubt been handicapped by their bad faces, while other open countenanced chaps have been able to put through an innocent plea, because they really looked honest and therefore innocent. For that matter, though, there's many a man in prison who is not inherently bad.

"He has lived along in many cases more than half his life never thinking of stealing because there was no need of doing so. Then comes a hard up time. He has the opportunity to steal. He is in a hole, and maybe not through extravagance either. He takes what doesn't belong to him. He's caught and convicted. But I can't believe that that man's natural tendencies can be determined by what he does in five minutes when he has lived clean fifty years.

"Back to the finger prints. Sure enough. We have made about 10,000 in the last six months. Seems like a large number, but you know we take all persons convicted in a court where there is a formal presentment of a case against them.

"There are two kinds of impressions taken. One is rolled and the other is plain. The rolled impressions are taken by placing the fingers upon the slab of glass or metal on which the ink has been spread. The fingers are turned from one side of the nail to the other, but of course not up to or on the nail. The idea of this rolling from one side to the other is to get the fullest sort of an impression.

"The fingers are then raised and placed again lightly on a piece of plain white paper. Then they are rolled back and forth from one side to another the same as on the piece of inked glass. Compared to the art of printing the fingers are like the plate in the etching process, the ink sinking into the hollows instead of being applied to projecting types.

"Plain impressions are made by placing all fingers simultaneously on the paper without rolling them from side to side. For classification purposes the impressions are frequently divided into four types, called arches, loops, whorls and composites. These types are in turn classified, and so on. We can find any finger print record desired from our files within three minutes."

The bureau of identification keeps a number of men going all the time to maintain the records in an up to date condition. At times in the school room of the recruits demonstrating figures are given to prove the infallibility of the finger prints.

A bottle is placed on the desk and a recruit is instructed to put his hand upon it, while the instructor purposely absent from the room. The instructor returns, sprinkles black on the finger impressions left by the bottle, and then brushes the exposed surface with a camel hair brush, thus developing the finger marks. The instructor, having the finger prints of the recruits, is able to match and examine the bottle marks and name the man who handled it. This makes the strongest kind of an impression on a recruit's mind of the importance of disturbing nothing at the scene of a crime until a finger print expert arrives.

"Comparison of actual detective work with that of fiction?" says Lieut. Allen in conclusion. "Oh, the real thing isn't like the book detective stories—the book detective of the old school very much. All the psychological analysis you read about in detective stories will always remain just in stories.

"In actual life detectives do not take up a case as a problem to be played like a game of chess, move by move until the game is won as a matter of certainty. On the contrary, I am of the opinion that a great deal of their success in life is due to great good luck."